

ABSTRACT

A commutator motor having excellent performance of preventing coils from being burnt at overload can operate from either AC or DC power sources. This commutator comprises an iron core having plural slots, a rotation shaft inserted in a center of the iron core, and a pair of first and second commutators mounted on the rotation shaft at opposite ends of the iron core. A first coil wire is connected to the first commutator, and is wound on bottoms of the slots to form an inner coil. A second coil wire having a smaller diameter than the first coil wire is connected to the second commutator, and is wound on the inner coil in the slots to form an outer coil.

The commutator motor of the present invention has a double winding structure that can operate from either AC or DC power sources. Since a diameter of the coil wire of the outer coil of the double winding structure is smaller than the diameter of the coil wire of the inner coil, it is possible to improve the heat radiation effect. When the outer coil is cooled from outside, the cooling efficiency is further improved. In addition, there is an advantage of preventing the coil wire of the outer coil from being burnt at overload.

10 Since the commutator motor of the present invention provides improved safety and reliability of electric appliances such as vacuum cleaners, electric power tools and so on, its applications are expected.